

REMARKS

Claims 1 and 3-16 remain pending in this application. Independent claims 1, 4, 7, 9 and 11-16 have been amended. Reexamination and reconsideration of the application, as amended, are respectfully requested.

Claims 1, 3, 7-8, 13 and 15 are rejected under 35 USC 103(a) on Yamashita '009 (US 5,873,009) in view of Baldwin (US 6,732,195), Yamashita '276 (US 5,343,276) and Barritz (US 6,029,145). Claims 4-6, 9-12, 14 and 16 are rejected under 35 USC 103(a) on Yamashita '009 in view of Baldwin, Yamashita '276, Barritz and Yacoub (US 6,552,813). These rejections are respectfully traversed.

The present invention is directed to preventive maintenance management comprising a number of elements in combination. For example, representative claim 1, as amended, recites a management terminal, a printer and a hand-held device configured as a maintenance terminal. The management terminal, printer and hand-held device are connected to each other over an external network. The management terminal receives use information sent from the printer, and determines whether preventive maintenance for the printer is needed or not based on the received use information. When it is determined that preventive maintenance is needed, the management terminal transmits instruction information instructing preventive maintenance to the hand-held device. The hand-held device provides a notification of the preventive maintenance instruction information through a display of the hand-held device.

In one embodiment, for example, a maintenance person responsible for maintaining a printer may carry a hand-held device. When printer use information, such as a number of copies being made, is reported to the management terminal by the printer over a network, the management terminal can compare that use information against a threshold value to determine whether trouble is likely to occur in the printer based on the type of use reported. If it is determined that trouble is likely to occur based on the reported use, the management terminal can send a notification to the hand-held device so that an instruction to perform preventive maintenance is displayed to the maintenance person. Because the instruction is sent to a hand-

held device, the maintenance person may receive it while in the field and thus carry out the preventive maintenance with adequate timing. In this manner, occurrence of trouble with the printer can be prevented in a very efficient manner.

This combination of elements, wherein the need for preventive maintenance is determined based on received use information and, if so, a preventive maintenance instruction is provided to a hand-held device for display, is not disclosed or suggested by the cited references, viewed alone or in combination.

For example, the Examiner relies on Baldwin for teaching a handheld portable maintenance terminal. However, this portable terminal in the context of Baldwin's disclosure does not as whole satisfy the requirements of the claims regarding the operation of the hand-held device. That is, Baldwin does not disclose a hand-held device that displays a preventive maintenance instruction from a management terminal based on use information received from the printer itself. Rather, Baldwin discloses a handheld portable terminal that interfaces directly with a printer to both receive printer information and download appropriate software upgrades during a maintenance visit (col. 5, lines 11-20). In further contrast to the claimed subject matter, the maintenance workstation to which Baldwin's handheld portable terminal can connect does not connect to the printer or receive any information from the printer.

Additionally, the Examiner relies on Yamashita '009 for teaching a determination of whether preventive maintenance is needed. Applicants respectfully disagree that Yamashita '009 teaches a preventive maintenance determination as claimed. In particular, the portion of Yamashita '009 upon which the Examiner relies for this teaching, lines 57-67 of col. 1, describes replacement maintenance work caused by exceeded thresholds indicating "that the corresponding component is being used beyond its lifetime" (emphasis added). In contrast, the claims recite a determination of whether preventive maintenance is needed. A determination that replacement maintenance is needed when a component has been used beyond its lifetime, as in Yamashita '009, cannot be equated with a determination of whether preventive maintenance is needed, as

claimed, since preventive maintenance relates to maintenance for preventing problems during the course of, not beyond, a component's lifetime.

Accordingly, since the cited art does not teach or suggest, either individually or collectively, the combination of elements required by the claims, the rejections of claim 1 and 3-16 should be withdrawn.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 116692005500.

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